

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (original) A hermetically sealed pressure-balanced accumulator comprising:
a housing;
a moveable divider mechanism for separating said housing into at least an accumulator chamber at a pre-selected accumulator pressure, a first balancing chamber responsive to changes in ambient pressure for adjusting said pre-selected accumulator pressure with respect to ambient pressure, and a second balancing chamber responsive to said first balancing chamber, said first and second balancing chambers maintaining a predetermined pressure differential between said pre-selected accumulator pressure and ambient pressure; and

a hermetic sealing device for sealing said first balancing chamber from at least one of said accumulator chamber and said second balancing chamber.

2. (original) The hermetically sealed pressure-balanced accumulator of claim 1 in which said hermetic sealing device for sealing said first balancing chamber includes a first bellows device.

3. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 2 further including a hermetic sealing device for sealing said second balancing chamber from said accumulator chamber.

4. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 3 in which said hermetic sealing device for sealing said second balancing chamber includes a second bellows device.

5. (currently amended) The hermetically sealed pressure-balanced accumulator of claim 4 1 in which said movable divider mechanism separates said housing into said first balancing chamber, said second balancing chamber, said accumulator chamber, and a third balancing chamber, said third balancing chamber is pressurized to provide said accumulator chamber with said pre-selected accumulator pressure.

6. (original) The hermetically sealed pressure-balanced accumulator of claim 5 further including a hermetic sealing device for sealing said third balancing chamber from said accumulator chamber.

7. (currently amended) The hermetically sealed pressure-balanced accumulator of claim 6 in which said hermetic sealing device for sealing said third balancing chamber includes a ~~third~~ bellows device.

8. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 7 4 in which said first~~[[,]]~~ and second ~~and-third~~ bellows devices include welded metal bellows.

9. (original) The hermetically sealed pressure-balanced accumulator of claim 1 in which said accumulator chamber is a hydraulic fluid chamber for storing hydraulic fluid.

10. (original) The hermetically sealed pressure-balanced accumulator of claim 1 in which said movable divider mechanism is a piston for responding to ambient pressure changes in said first balancing chamber.

11. (original) The hermetically sealed pressure-balanced accumulator of claim 5 in which said movable divider mechanism includes first and second pistons connected by a rod for responding to ambient pressure changes in said first balancing chamber.

12. (original) The hermetically sealed pressure-balanced accumulator of claim 5 in which said third balancing chamber includes pressurized fluid.

13. (original) The hermetically sealed pressure-balanced accumulator of claim 12 in which said pressurized fluid is a gas.

14. (original) The hermetically sealed pressure-balanced accumulator of claim 12 in which said pressurized fluid is a liquid.

15. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 5 in which said third balancing chamber includes a spring device.

16. (original) The hermetically sealed pressure-balanced accumulator of claim 1 in which said first balancing chamber includes a fluid.

17. (original) The hermetically sealed pressure-balanced accumulator of claim 16 in which said fluid is a liquid.

18. (original) The hermetically sealed pressure-balanced accumulator of claim 16 in which said fluid is a gas.

19. (original) The hermetically sealed pressure-balanced accumulator of claim 1 in which said second balancing chamber is sealed.

20. (original) The hermetically sealed pressure balanced accumulator of claim 1 in which said second balancing chamber includes a gas chamber at a pressure lower than ambient pressure.

21. (original) The hermetically sealed pressure balanced accumulator of claim 1 in which said second balancing chamber includes a liquid chamber at a pressure lower than ambient pressure.

22. (original) The hermetically sealed pressure balanced accumulator of claim 1 in which said second balancing chamber is a vacuum.

23. (withdrawn) The hermetically sealed pressure balanced accumulator of claim 1 in which said second balancing chamber includes a spring device.

24. (original) The hermetically sealed pressure-balanced accumulator of claim 5 in which said third balancing chamber is sealed.

25. (withdrawn) A hermetically sealed pressure-balanced accumulator comprising:

a housing;

a movable divider mechanism for separating said housing into a gas chamber, a liquid chamber, and an accumulator chamber;

a first bellows device for hermetically sealing said gas chamber from said accumulator chamber; and

a second bellows device for hermetically sealing said liquid chamber from said accumulator chamber.

26. (original) A hermetically sealed pressure-balanced accumulator comprising:

a housing;

a movable divider mechanism including first and second pistons connected by a rod for separating said housing into an accumulator chamber at an accumulator pressure, a first gas chamber pressurized to a pressure higher than ambient pressure for providing said accumulator chamber with accumulator pressure, a liquid chamber responsive to changes in ambient pressure for adjusting said accumulator pressure with respect to

ambient pressure, and a second gas chamber at a pressure lower than ambient pressure responsive to said liquid chamber, said liquid chamber and said first and second gas chambers thereby maintaining a predetermined differential between said accumulator pressure and ambient pressure;

a first bellows device for hermetically sealing said higher pressure gas chamber from said accumulator chamber; and

a second bellows device for hermetically sealing said fluid chamber from said lower pressure gas chamber.

27. (withdrawn) A hermetically sealed pressure-balanced accumulator comprising:

a housing;

a divider mechanism for separating said housing into at least first and second balancing chambers and an accumulator chamber; and

a hermetic sealing device for sealing said first balancing chamber from said accumulator chamber.

28. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 27 in which said hermetic sealing device includes a bellows.

29. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 27 in which said first balancing chamber includes a fluid chamber for applying pressure to said divider mechanism.

30. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 29 in which said fluid chamber includes a gas.

31. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 29 in which said fluid chamber includes a liquid.

32. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 27 in which said second balancing chamber includes a fluid chamber.

33. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 32 in which said second balancing chamber includes a gas.

34. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 32 in which said second balancing chamber includes a liquid.

35. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 27 in which said accumulator chamber includes a hydraulic fluid chamber for holding hydraulic fluid.

36. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 27 in which said divider mechanism includes a piston for responding to pressure changes in said first balancing chamber.

37. (withdrawn) The hermetically sealed pressure-balanced accumulator of claim 28 further including a second hermetic sealing device for sealing said second balancing chamber from said accumulator chamber.

38. (original) A hermetically sealed pressure-balanced accumulator comprising:
a housing;
a divider mechanism for separating said housing into first, second and third balancing chambers and an accumulator chamber;
a first hermetic sealing device for sealing said first balancing chamber from said second balancing chamber; and
a second hermetic sealing device for sealing said third balancing chamber from said accumulator chamber.

39. (original) The hermetically sealed pressure-balanced accumulator of claim 38 in which said first hermetic sealing device includes a first bellows device.

40. (original) The hermetically sealed pressure-balanced accumulator of claim 38 in which said second hermetic sealing device includes a second bellows device.

41. (original) The hermetically sealed pressure-balanced accumulator of claim 38 in which said first balancing chamber includes a fluid chamber for applying pressure to said divider mechanism.

42. (original) The hermetically sealed pressure-balanced accumulator of claim 41 in which fluid chamber is a gas chamber.

43. (original) The hermetically sealed pressure-balanced accumulator of claim 41 in which fluid chamber is a liquid chamber.

44. (original) The hermetically sealed pressure-balanced accumulator of claim 38 in which said second balancing chamber includes a low pressure fluid chamber.

45. (currently amended) The hermetically sealed pressure-balanced accumulator of claim ~~43~~ 44 in which said low pressure fluid chamber includes a gas.

46. (currently amended) The hermetically sealed pressure-balanced accumulator of claim ~~43~~ 44 in which said low pressure fluid chamber includes a liquid.

47. (currently amended) The hermetically sealed pressure-balanced accumulator of claim ~~43~~ 38 in which said second balancing chamber is a vacuum.

48. (original) The hermetically sealed pressure-balanced accumulator of claim 38 in which said third balancing chamber includes a pressurized fluid chamber.

49. (original) The hermetically sealed pressure-balanced accumulator of claim 48

in which said pressurized fluid chamber includes a gas.

50. (original) The hermetically sealed pressure-balanced accumulator of claim 48 in which said pressurized fluid chamber includes a liquid.

51. (original) The hermetically sealed pressure-balanced accumulator of claim 38 in which said accumulator chamber includes a hydraulic fluid chamber for holding hydraulic fluid.

52. (original) The hermetically sealed pressure-balanced accumulator of claim 38 in which said divider mechanism includes first and second pistons connected by a rod for responding to pressure changes in said first balancing chamber.

53. (new) The hermetically sealed pressure balanced accumulator of claim 2 in which said first bellows device includes a welded metal bellows.

54. (new) The hermetically sealed pressure balanced accumulator device of claim 2 further including a hermetic sealing device for sealing said second balancing chamber from said first balancing chamber.

55. (new) The hermetically sealed pressure balanced accumulator device of claim 54 in which said hermetic sealing device for sealing said second balancing chamber from said first balancing chamber is a bellows device.

56. (new) The hermetically sealed pressure balanced accumulator device of claim 55 in which said bellows device is a welded metal bellows.